



Sequence Listing created in PatentIn.ST25

SEQUENCE LISTING

D  
<110> Weigel, Paul H.  
DeAngelis, Paul  
Kumari, Kshama

<120> Hyaluronan Synthase Gene and Uses Thereof

<130> 3554.011

<140> US 09/469,200

<141> 1999-12-21

<150> US 09/178,851

<151> 1998-10-26

<150> US 60/064,435

<151> 1997-10-31

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<170> PatentIn version 3.1

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gttgacgatg gaagtgtca tgagacaggt attaagcgca ttgaagacta tggcggtgac 360

actggtgacc tatcaagcaa tgtcattgtt catcggtcag agaaaaatca agggaaagcgt 420

catcacagg cctgggcctt tgaaagatca gacgctgatg tcttttgac cggtgactca 480

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ttgacagata ttgcstatga taatgctttt ggcgttgaac gagctgccca atccgttaca 660

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**Sequenc Listing created in PatentIn.ST25**

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Ser Leu Ser Ile Tyr Gly Phe Leu Leu Ile Ala Tyr Leu Leu Val Lys  
35 40 45

Met Ser Leu Ser Phe Phe Tyr Lys Pro Phe Lys Gly Arg Ala Gly Gln  
50 55 60

Tyr Lys Val Ala Ala Ile Ile Pro Ser Tyr Asn Glu Asp Ala Glu Ser  
65 70 75 80

Leu Leu Glu Thr Leu Lys Ser Val Gln Gln Gln Thr Tyr Pro Leu Ala  
85 90 95

Glu Ile Tyr Val Val Asp Asp Gly Ser Ala Asp Glu Thr Gly Ile Lys

100            105

Sequence Listing created in PatentIn-ST25  
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*Cout*  
Ile Val His Arg Ser Glu Lys Asn Gln Gly Lys Arg His Ala Gln Ala  
130            135            140

Trp Ala Phe Glu Arg Ser Asp Ala Asp Val Phe Leu Thr Val Asp Ser  
145            150            155            160

Asp Thr Tyr Ile Tyr Pro Asp Ala Leu Glu Glu Leu Leu Lys Thr Phe  
165            170            175

Asn Asp Pro Thr Val Phe Ala Ala Thr Gly His Leu Asn Val Arg Asn  
180            185            190

Arg Gln Thr Asn Leu Leu Thr Arg Leu Thr Asp Ile Arg Tyr Asp Asn  
195            200            205

Ala Phe Gly Val Glu Arg Ala Ala Gln Ser Val Thr Gly Asn Ile Leu  
210            215            220

Val Cys Ser Gly Pro Leu Ser Val Tyr Arg Arg Glu Val Val Val Pro  
225            230            235            240

Asn Ile Asp Arg Tyr Ile Asn Gln Thr Phe Leu Gly Ile Pro Val Ser  
245            250            255

Ile Gly Asp Asp Arg Cys Leu Thr Asn Tyr Ala Thr Asp Leu Gly Lys  
260            265            270

Thr Val Tyr Gln Ser Thr Ala Lys Cys Ile Thr Asp Val Pro Asp Lys  
275            280            285

Met Ser Thr Tyr Leu Lys Gln Gln Asn Arg Trp Asn Lys Ser Phe Phe  
290            295            300

Arg Glu Ser Ile Ile Ser Val Lys Lys Ile Met Asn Asn Pro Phe Val

**Sequenc Listing created in PatentIn.ST25**

**Ala Leu Trp Thr Ile Leu Glu Val Ser Met Phe Met Met Leu Val Tyr**  
325            330            335

**Ser Val Val Asp Phe Phe Val Gly Asn Val Arg Glu Phe Asp Trp Leu**  
340            345            350

**Arg Val Leu Ala Phe Leu Val Ile Ile Phe Ile Val Ala Leu Cys Arg**  
355            360            365

**Asn Ile His Tyr Met Leu Lys His Pro Leu Ser Phe Leu Leu Ser Pro**  
370            375            380

Phe Tyr Gly Val Leu His Leu Phe Val Leu Gln Pro Leu Lys Leu Tyr  
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22

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Sequence Listing created in PatentIn.ST25

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ctgggtatgt tctacattqq aatattqctc tctcqacaat ctggggagta tcaqcttata 180

gtatttcgt ttttaggattt ttcccttgcac aagttttatt ttcaagaactq aacaggaaac 240

gtcttcgc aa gtggatttct ctca gaccta a g gttt gaaa tgatattccat ttgactatga

tcattgttgtt atatcccgaa gatccttata tttttccaga a gtgcctcgaa tctgtacgtg 360

actctgatta tggcaacgtt accccatctga tttgtgtcat tgaccgtgtat gaggacgata 420

Statistical Analysis of the Impact of the Pandemic on the State of Health in Brazil - 54

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**Sequence Listing created in PatentIn.ST25**

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Lys Ile Val Glu Phe Gln Ile Thr Lys Cys Lys Glu Lys Leu Ser Ala  
35 40 45

His Pro Ser Val Asn Ser Ala His Leu Ser Val Asn Lys Glu Glu Lys  
50 55 60

**Sequence Listing created in PatentIn.ST25**

**Val Asn Val Cys Asp Ser Pro Leu Asp Ile Ala Thr Gln Leu Leu Leu**  
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**Ser Asn Val Lys Lys Leu Val Leu Ser Asp Ser Glu Lys Asn Thr Leu**  
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**Lys Asn Lys Trp Lys Leu Leu Thr Glu Lys Lys Ser Glu Asn Ala Glu**  
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130            135            140

**Arg Lys Lys Arg Leu Gly Ile Lys Pro Glu His Gln His Val Gly Leu**  
145            150            155            160

**Ser Ile Ile Val Thr Thr Phe Asn Arg Pro Ala Ile Leu Ser Ile Thr**  
165            170            175

**Leu Ala Cys Leu Val Asn Gln Lys Thr His Tyr Pro Phe Glu Val Ile**  
180            185            190

**Val Thr Asp Asp Gly Ser Gln Glu Asp Leu Ser Pro Ile Ile Arg Gln**  
195            200            205

**Tyr Glu Asn Lys Leu Asp Ile Arg Tyr Val Arg Gln Lys Asp Asn Gly**  
210            215            220

**Phe Gln Ala Ser Ala Ala Arg Asn Met Gly Leu Arg Leu Ala Lys Tyr**  
225            230            235            240

**Asp Phe Ile Gly Leu Leu Asp Cys Asp Met Ala Pro Asn Pro Leu Trp**  
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**Val His Ser Tyr Val Ala Glu Leu Leu Glu Asp Asp Asp Leu Thr Ile**  
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**Sequence Listing created in PatentIn.ST25**

Ile Gly Pro Arg Lys Tyr Ile Asp Thr Gln His II Asp Pro Lys Asp  
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Phe Leu Asn Asn Ala Ser Leu Leu Glu Ser Leu Pro Glu Val Lys Thr  
290            295            300

Asn Asn Ser Val Ala Ala Lys Gly Glu Gly Thr Val Ser Leu Asp Trp  
305            310            315            320

Arg Leu Glu Gln Phe Glu Lys Thr Glu Asn Leu Arg Leu Ser Asp Ser  
325            330            335

Pro Phe Arg Phe Phe Ala Ala Gly Asn Val Ala Phe Ala Lys Lys Trp  
340            345            350

Leu Asn Lys Ser Gly Phe Phe Asp Glu Glu Phe Asn His Trp Gly Gly  
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Glu Asp Val Glu Phe Gly Tyr Arg Leu Phe Arg Tyr Gly Ser Phe Phe  
370            375            380

Lys Thr Ile Asp Gly Ile Met Ala Tyr His Gln Glu Pro Pro Gly Lys  
385            390            395            400

Glu Asn Glu Thr Asp Arg Glu Ala Gly Lys Asn Ile Thr Leu Asp Ile  
405            410            415

Met Arg Glu Lys Val Pro Tyr Ile Tyr Arg Lys Leu Leu Pro Ile Glu  
420            425            430

Asp Ser His Ile Asn Arg Val Pro Leu Val Ser Ile Tyr Ile Pro Ala  
435            440            445

Tyr Asn Cys Ala Asn Tyr Ile Gln Arg Cys Val Asp Ser Ala Leu Asn  
450            455            460

Gln Thr Val Val Asp Leu Glu Val Cys Ile Cys Asn Asp Gly Ser Thr  
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**Sequence Listing created in PatentIn.ST25**

**Asp Asn Thr Leu Glu Val Ile Asn Lys Leu Tyr Gly Asn Asn Pro Arg**  
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**Val Arg Ile Met Ser Lys Pro Asn Gly Gly Ile Ala Ser Ala Ser Asn**  
500            505            510

**Ala Ala Val Ser Phe Ala Lys Gly Tyr Tyr Ile Gly Gln Leu Asp Ser**  
515            520            525

**Asp Asp Tyr Leu Glu Pro Asp Ala Val Glu Leu Cys Leu Lys Glu Phe**  
530            535            540

**Leu Lys Asp Lys Thr Leu Ala Cys Val Tyr Thr Thr Asn Arg Asn Val**  
545            550            555            560

**Asn Pro Asp Gly Ser Leu Ile Ala Asn Gly Tyr Asn Trp Pro Glu Phe**  
565            570            575

**Ser Arg Glu Lys Leu Thr Thr Ala Met Ile Ala His His Phe Arg Met**  
580            585            590

**Phe Thr Ile Arg Ala Trp His Leu Thr Asp Gly Phe Asn Glu Lys Ile**  
595            600            605

**Glu Asn Ala Val Asp Tyr Asp Met Phe Leu Lys Leu Ser Glu Val Gly**  
610            615            620

**Lys Phe Lys His Leu Asn Lys Ile Cys Tyr Asn Arg Val Leu His Gly**  
625            630            635            640

**Asp Asn Thr Ser Ile Lys Lys Leu Gly Ile Gln Lys Lys Asn His Phe**  
645            650            655

**Val Val Val Asn Gln Ser Leu Asn Arg Gln Gly Ile Thr Tyr Tyr Asn**  
660            665            670

**Tyr Asp Glu Phe Asp Asp Leu Asp Glu Ser Arg Lys Tyr Ile Phe Asn**  
675            680            685

Sequence Listing created in PatentIn ST25

Lys Thr Ala Glu Tyr Gln Glu Glu Ile Asp Ile Leu Lys Asp Ile Lys  
690            695            700

Ile Ile Gln Asn Lys Asp Ala Lys Ile Ala Val Ser Ile Phe Tyr Pro  
705            710            715            720

Asn Thr Leu Asn Gly Leu Val Lys Lys Leu Asn Asn Ile Ile Glu Tyr  
725            730            735

*Arg*  
Asn Lys Asn Ile Phe Val Ile Val Leu His Val Asp Lys Asn His Leu  
740            745            750

Thr Pro Asp Ile Lys Lys Glu Ile Leu Ala Phe Tyr His Lys His Gln  
755            760            765

Val Asn Ile Leu Leu Asn Asn Asp Ile Ser Tyr Tyr Thr Ser Asn Arg  
770            775            780

Leu Ile Lys Thr Glu Ala His Leu Ser Asn Ile Asn Lys Leu Ser Gln  
785            790            795            800

Leu Asn Leu Asn Cys Glu Tyr Ile Ile Phe Asp Asn His Asp Ser Leu  
805            810            815

Phe Val Lys Asn Asp Ser Tyr Ala Tyr Met Lys Lys Tyr Asp Val Gly  
820            825            830

Met Asn Phe Ser Ala Leu Thr His Asp Trp Ile Glu Lys Ile Asn Ala  
835            840            845

His Pro Pro Phe Lys Lys Leu Ile Lys Thr Tyr Phe Asn Asp Asn Asp  
850            855            860

Leu Lys Ser Met Asn Val Lys Gly Ala Ser Gln Gly Met Phe Met Thr  
865            870            875            880

Tyr Ala Leu Ala His Glu Leu Leu Thr Ile Ile Lys Glu Val Ile Thr  
885            890            895

Sequence Listing created in PatentIn.ST25

Ser Cys Gin Ser Ile Asp Ser Val Pro Glu Tyr Asn Thr Glu Asp Ile  
900 905 910

Trp Phe Gin Phe Ala Leu Leu Ile Leu Glu Lys Lys Thr Gly His Val  
915 920 925

Phe Asn Lys Thr Ser Thr Leu Thr Tyr Met Pro Trp Glu Arg Lys Leu  
930 935 940

Gln Trp Thr Asn Glu Gin Ile Glu Ser Ala Lys Arg Gly Glu Asn Ile  
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Pro Val Asn Lys Phe Ile Ile Asn Ser Ile Thr Leu  
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<400> 10

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Ile Thr Gly Tyr Val Leu His Trp Asn Ile Ala Leu Ser Thr Ile Trp  
35 40 45

Gly Val Ser Ala Tyr Gly Ile Phe Val Phe Gly Phe Leu Ala Gin  
50 55 60

Val Leu Phe Ser Glu Leu Asn Arg Lys Arg Leu Arg Lys Trp Ile Ser  
65 70 75 80

Leu Arg Pro Lys Gly Trp Asn Asp Val Arg Leu Ala Val Ile Ile Ala  
85 90 95

Gly Tyr Arg Glu Asp Pro Tyr Met Phe Gin Lys Cys Leu Glu Ser Val

100            105            110            Sequence Listing created in PatentIn.ST25

Arg Asp Ser Asp Tyr Gly Asn Val Ala Arg L u II Cys Val Ile Asp  
115            120            125

Gly Asp Glu Asp Asp Asp Met Arg Met Ala Ala Val Tyr Lys Ala Ile  
130            135            140

Tyr Asn Asp Asn Ile Lys Lys Pro Glu Phe Val Leu Cys Glu Ser Asp  
145            150            155            160

Asp Lys Glu Gly Glu Arg Ile Asp Ser Asp Phe Ser Arg Asp Ile Cys  
165            170            175

Val Leu Gln Pro His Arg Gly Lys Arg Glu Cys Leu Tyr Thr Gly Phe  
180            185            190

Gln Leu Ala Lys Met Asp Pro Ser Val Asn Ala Val Val Leu Ile Asp  
195            200            205

Ser Asp Thr Val Leu Glu Lys Asp Ala Ile Leu Glu Val Val Tyr Pro  
210            215            220

Leu Ala Cys Asp Pro Glu Ile Gln Ala Val Ala Gly Glu Cys Lys Ile  
225            230            235            240

Trp Asn Thr Asp Thr Leu Leu Ser Leu Leu Val Ala Trp Arg Tyr Tyr  
245            250            255

Ser Ala Phe Cys Val Glu Arg Ser Ala Gln Ser Phe Phe Arg Thr Val  
260            265            270

Gln Cys Val Gly Gly Pro Leu Gly Ala Tyr Lys Ile Asp Ile Ile Lys  
275            280            285

Glu Ile Lys Asp Pro Trp Ile Ser Gln Arg Phe Leu Gly Gln Lys Cys  
290            295            300

Thr Tyr Gly Asp Asp Arg Arg Leu Thr Asn Glu Ile L u Met Arg Gly

Sequence Listing created in PatentIn.ST25

305            310            315            320

Lys Lys Val Val Phe Thr Pro Phe Ala Val Gly Trp Ser Asp Ser Pro  
325            330            335

Thr Asn Val Phe Arg Tyr Ile Val Gln Gln Thr Arg Trp Ser Lys Ser  
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Trp Cys Arg Glu Ile Trp Tyr Thr Leu Phe Ala Ala Trp Lys His Gly  
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Leu Ser Gly Ile Trp Leu Ala Phe Glu Cys Leu Tyr Gln Ile Thr Tyr  
370            375            380

Phe Phe Leu Val Ile Tyr Leu Phe Ser Arg Leu Ala Val Glu Ala Asp  
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Pro Arg Ala Gln Thr Ala Thr Val Ile Val Ser Thr Thr Val Ala Leu  
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Ile Lys Cys Gly Tyr Phe Ser Phe Arg Ala Lys Asp Ile Arg Ala Phe  
420            425            430

Tyr Phe Val Leu Tyr Thr Phe Val Tyr Phe Phe Cys Met Ile Pro Ala  
435            440            445

Arg Ile Thr Ala Met Met Thr Leu Trp Asp Ile Gly Trp Gly Thr Arg  
450            455            460

Gly Gly Asn Glu Lys Pro Ser Val Gly Thr Arg Val Ala Leu Trp Ala  
465            470            475            480

Lys Gln Tyr Leu Ile Ala Tyr Met Trp Trp Ala Ala Val Val Gly Ala  
485            490            495

Gly Val Tyr Ser Ile Val His Asn Trp Met Phe Asp Trp Asn Ser Leu  
500            505            510

Ser Tyr Arg Phe Ala Leu Val Gly Ile Cys Ser Tyr Ile Val Phe Ile

515

520

Sequence Listing created in PatentIn.ST25  
525

Val Ile Val Leu Val Val Tyr Phe Thr Gly Lys Ile Thr Thr Trp Asn  
530            535            540

Phe Thr Lys Leu Gln Lys Glu Leu Ile Glu Asp Arg Val Leu Tyr Asp  
545            550            555            560

Ala Thr Thr Asn Ala Gln Ser Val  
565